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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,307	11/18/2003	Dirk N. Yerian	36110	6918

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EXAMINER

EWALD, MARIA VERONICA

ART UNIT

PAPER NUMBER

1722

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/716,307		YERIAN ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Maria Veronica D. Ewald		1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 7-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-10 and 18-27 is/are rejected.
- 7) ☒ Claim(s) 11-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Allowable Subject Matter*

13. Claims 11 – 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Claim Rejections - 35 USC § 102*

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 7 – 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Goe, et al. (U.S. 5,593,707). Goe, et al. teach a first tube having an auger screw for moving a powdered material through the first tube (column 4, lines 20 – 25); means for heating the first tube such that the powdered material moving through the first tube is heated to a predetermined temperature without melting the powdered material (column 7, lines 60 – 67), the means for heating being coupled to an outer portion of the first heated tube (column 4, lines 60 – 65); and a hopper coupled to the first heated tube and staged for dispensing the heated powdered material (column 6, lines 66 – 67). In addition, there is a second tube coupled to the first heated tube to facilitate recirculating the powdered material between the first and second heated tubes (figure 1).

Art Unit: 1722

Claim 26 is rejected under 35 U.S.C. 102(b) as being anticipated by Goe, et al. (U.S. 5,593,707). Goe, et al. teach a powder preheating system comprising: at least one tube having powdered material flowing therethrough (column 4, lines 20 – 25); means for heating the tube such that the powdered material flowing through the tube is also heated, wherein the powdered material is not melted within the tube (column 4, lines 60 – 65; column 7, lines 60 – 67); means for feeding the powdered material from a storage bin to the at least one heated tube (column 6, lines 66 – 67); and means for dispensing the heated powdered material from the at least one heated tube (column 7, lines 30 – 35).

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goe, et al. in view of Arpajian, et al. (U.S. 3,741,699). Goe, et al. teach the characteristics previously described but do not teach that the tubes are heated via water jackets.

In a method to pre-plasticize thermosetting resin powder, Arpajian, et al. teach the use of three extrusion cylinders (items 46, 48 and 50 – figure 2; column 3, lines 9 – 10). The resin powder is fed to the cylinders from a common hopper (column 3, lines 13 – 14). Each of the cylinders includes a screw (items 46B, 48B, and 50B) and is heated

Art Unit: 1722

by jacketed heated fluid mediums (column 3, lines 18 – 23). The use of multiple tubes or cylinders shortens cycle time and provides for a more efficient means of dispensing material (column 2, lines 12 – 14). This reads on the Applicant's claim that the first and second heated tubes are heated via first and second water jackets having heated water flowing therethrough, the first and second water jackets substantially surrounding a circumference of the first and second heated tubes.

It would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the apparatus of Goe, et al. with the water jackets of Arpajian, et al. for the purpose of heating the powder to maintain it at the desired temperature just below the temperature where the powder starts to become tacky.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goe, et al. in view of Arpajian, et al., and further in view of Morgan (U.S. 6,380,517). Goe, et al. and Arpajian, et al. teach the characteristics previously described but do not teach that the water jackets are baffled.

In a method to heat-treat solid particulates under vacuum conditions, Morgan teaches the use of heated gas. The gaseous exhaust conduit has a plurality of baffles connected to the inner walls by welds which are offset and spaced from each other along the horizontal axis to provide a tortuous path for the gases flowing therethrough and for distributing such gases (column 4, lines 30 – 34). Though Morgan teaches the use of a gaseous medium, the baffles are provided to maximize distribution of the gases used in a system to heat particulate matter.

Art Unit: 1722

Thus, it would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the apparatus of Goe, et al. with the water jackets of Arpajian, to further include the baffles of Morgan for the purpose of distributing the water through the jackets to maximize its distribution therethrough as taught by Morgan (column 4, lines 33 – 34).

Claims 18 – 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goe, et al. in view of McLeod, Jr. et al. (U.S. 3,645,505). Goe, et al. teach the characteristics previously described but do not teach the additional components of sensors and scales. In a method to add color to powdered plastic materials prior to injection molding, extrusion, or blow molding, McLeod, et al. teach there are two supply hoppers coupled with two screw conveyors leading to a blending conveyor (figure 2; column 4, lines 20 – 25). The upper metering conveyor (item 20 – figure 2) is used to add colorant to the base material coming in the second metering conveyor (item 16 – figure 2). There is a control system provided to meter the level of resin and colorant, which come from the hoppers to ultimately end at the blending conveyor (column 4, lines 40 – 45). This reads on the Applicant's claims that the apparatus is also comprised of a sensor located in at least one of the first and second tubes to sense when the powdered material is at or below a predetermined level (column 3, lines 50 – 60); a vibration chute coupled to the hopper to facilitate flow of the powdered material from the hopper (column 2, lines 55 – 65); a first scale to measure an amount of powdered material to be colored (column 4, lines 20 – 35); a second scale

Art Unit: 1722

to measure an amount of powdered material dispensed from the hopper (column 4, lines 50 – 55); a scale to measure an amount of powdered material dispensed from the hopper (column 4, lines 35 – 40); a mixer to mix a pigment with the powdered material (column 4, lines 33 – 35); a pigment receptacle to meter an amount of pigment into the mixer (column 4, lines 43 – 46); a portable electronic device employed to operate the system (column 4, lines 25 – 30); and means for coloring the powdered material (column 4, lines 43 – 45).

It would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the apparatus of Goe, et al. with the scales, mixer, vibratory chute and sensors of McLeod, et al. for the purposes of ensuring that the amounts of resin and colorant are adequately measured to the proper proportions desired, ensuring that the resin and colorant are adequately mixed together and for ensuring that the materials are thoroughly dispensed from the hoppers.

### ***Response to Arguments***

16. Applicant's arguments with respect to claims 7 – 27 have been considered but are moot in view of the new ground(s) of rejection. Applicant argued that the reference of Severiens does not teach auger tubes that are heated via means coupled to the outside of the tubes. In addition, Applicant argued that the original combination of references of Arpajian, et al. and Seta, et al. did not teach augers that are used to mix and maintain the powdered material at a temperature just before they become tacky and furthermore, operate as extruder screws, therefore, mixing the plastic material at

Art Unit: 1722

the point where they are already melted. Examiner agrees and has cited the references of Goe, et al. and McLeod, et al. which both teach mixing the powdered material prior to extrusion or any molding process such that the powdered material is heated, but not melted.

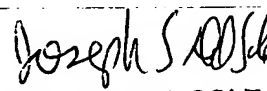
***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MVE

  
JOSEPH S. DEL SOLE  
PRIMARY EXAMINER  
2/21/06